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ABSTRACT

This study examined whether the effects of collaboration between schools and higher education would persist 1 year after discontinuation of an action research project. Participants were teachers and other district personnel who had completed an action research seminar the previous year. They completed a survey that compared their present attitudes toward research and research issues with those that they held prior to the seminar. The survey also had them reflect on their experiences and the skills they developed during their action research projects, examined how their participation had affected their classroom practices, and investigated how they integrated the new skills, especially the use of technology, that they had learned into their practice. Data analysis indicated that 1 year later, participants perceived themselves as being capable of both consuming and creating research that was meaningful and valuable. Teachers had heightened awareness of the need to gather data systematically before drawing conclusions. The project affected how they talked about their classroom practice and the activities in which they engaged to improve their own teaching and their students' learning. They appeared to have developed attitudes that enabled them to apply theory to practice in ways that had value for them and their students. Teachers were more comfortable accessing information databases on the World Wide Web. (Contains 14 references.) (SM)

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Presented at the Mid-Western Educational Research Association

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Teacher-Researchers: One Year Later

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Introduction

Action research is recognized to have value for the individual teacher-participants who engage in this type of inquiry (Calhoun, 1996; Herndon & Fauske, 1994). It is also recognized to have a number of potential problems and shortcomings (King & Lonnquist, 1994; Nunan, 1994). One problem cited is a lack of training in traditional research methodologies for teachers working under this umbrella (Bogdan & Biklen, 1992; Gay, 1996). In order for teachers to impact educational change effectively and to be empowered as professionals, this concern must be addressed. To engage in the type of systematic inquiry that addresses the criticism levied against action research and to support teachers in this additional responsibility, Sagor (1997) suggested that "it takes the right mix of culture, history, leadership, and structural support to bring the full power of collaborative teacher research to fruition" (p. 182).

Calhoun (1993) identified three distinctly different forms of action research based on her own work in schools; these were individual teacher research, collaborative action research, and schoolwide action research. In discussing the benefits of each, she noted that it was important to select "one type of action research over another [because the choice] has important implications for the school renewal process" (p. 241). The key to selecting one method is the purpose behind the inquiry. The purpose behind this inquiry was to provide support for teachers in the form of a collaborative action research forum.

Design of the Action Research Practicum

Calhoun further suggested that any individuals or groups considering engaging in action research should attend to five elements: (1) purpose and process; (2) support available; (3) data available; (4) audience to whom results will be disseminated; and (5) anticipated side effects of the efforts. With that in mind, we set out to fund, plan, and

deliver an action research seminar for interested teachers in an inner-ring, suburban school district

Purpose and Process. The district received a Goals 2000 grant from the Ohio Department of Education to offer an action research graduate seminar for teachers who wanted to focus their attention on classroom and school-wide research efforts. The grant brought together a collaborative effort among district personnel, faculty from three higher education institutions, and the teacher-researchers. Participants applied for admission to the year-long seminar by proposing a "problem" that they wished to investigate.

Support. While participants were receiving graduate credit in "research" for the practicum, the committee which drafted the grant and Donna Snodgrass, who designed the course, determined that the teacher-researchers should receive more instruction in quasi-experimental and single-subject designs, rather than emphasizing traditional research designs, which tend to focus on experimental laboratory designs which are often unrealistic for teachers to design and execute. And while confirmatory statistical procedures were presented, discussed, and used by some in their research projects, the instructor emphasized descriptive and exploratory data collection and presentation methods as appropriate, valid, and often under-utilized tools for teachers to use as they investigated the issues in their classrooms or schools.

In addition to learning about research designs and data collection techniques that are useful at school sites, the teacher-researchers were taught skills in utilizing technological tools that could help them to complete their projects. Specifically, they learned to:

1. Access the Internet and other technological databases to search for relevant, useful and up-to-date resources; and
2. Employ user-friendly statistical software packages, such as *SPSS for Windows and Macs*.

The afore-mentioned skills were taught explicitly within the framework of the seminar meetings, and the information gained and skills developed were reinforced through activities designed to promote collaboration among the participants. Collaboration among

classroom teachers, district personnel, and higher education faculty members and graduate students from the participating institutions required the imposition of the semi-formal structure of the seminar setting, while making allowances for flexibility in negotiating processes and procedures that could meet the needs of the various stakeholders. The collaborative network was designed to provide the infrastructure necessary for individual teachers and teacher groups to claim ownership of their projects yet provide as much or as little support as needed (Snodgrass & Salzman, 1997).

Data Available. As a function of the process of action research, the data available were as rich and diverse as the projects themselves. In most cases the data were limited only by the needs and designs of the study. For instance, one study (Anselmo & Kulp, 1997) used a pretest-posttest control-group design with matched pairs of kindergarten students who were below grade level in pre-reading skills. Data included PPVT scores, letter identification and letter matching scores, and scores for identifying initial sounds. Others (Fankell, O'Sullivan, Smyth, & Usaj, 1997; Visoky & Poe, 1997) used qualitative data and exploratory techniques to investigate problems of interest.

Audience. From the outset, teachers were aware that their results would be disseminated in several ways to multiple audiences, the first and most obvious being themselves. However, they were also expected to write up their results for a publication (Snodgrass & Salzman, 1997) that would be presented to the State Department of Education and which has been disseminated from the district office to interested parties. In October of 1997, all of the teacher-researchers gathered to share their results in a half-day symposium hosted by one of the member institutions. Though these audiences were planned for in funding through the grant, in addition to these audiences, two of the teacher-researchers participated as members of a symposium at the 1997 conference of the Mid-Western Educational Research Association. A further unplanned audience at the time of the grant-writing was the Educational Resources Information Clearinghouse (ERIC). A copy of the monograph was sent and accepted for publication (it should be accessible by the time this paper is delivered).

Side Effects. Calhoun stated that, when collaborative action researchers share results, collegiality may be enhanced, especially when those results are focused on problems of genuine concern to a number of the stakeholders. In addition, she noted that some groups "stay together for several years, conducting several studies in areas of common interest while their technical skills and expertise in inquiry continue to grow" (p. 243). Though the grant was not re-funded, the current paper is one piece of evidence of the continued collaboration resulting from the action research process.

The Research Questions

Many school districts are able to sustain the types of efforts we have just described in very creative and effective ways under the auspices of grant monies. Many school and higher education collaborations also work well under these conditions (King & Lonquist, 1994), and this particular suburban district was no exception (Zawislan & Rak, 1997). In discussing efforts at reforming schools and teachers in the classroom, Darling-Hammond and Ball(1997) noted that "Without know-how and buy-in, innovations do not succeed. Neither can they succeed without supports, including such resources as materials, time, and opportunities to learn" (p. 2). The district, higher education partners, and the grant provided the supports, both technological and informational, and teachers in this district were able to focus on classroom problems that they wanted to investigate. But, what happens to these efforts when the money and even the infrastructure created to sustain them no longer exist? What impact will this training have for the teacher-researchers who participated? Those were the questions we were attempting to answer in this paper.

Methodology

Sample and Procedure

Participants were teachers (representatives of elementary, middle and high schools) and other district personnel in an inner-ring suburban school district who had completed an action research seminar during the 1996-97 school year. Near the end of the 1997-98 school year, 16 of the 18 people who participated in the action research

seminar responded to a survey based on the framework of the model in which they participated.

Of the participants who responded, the average number of years of experience in education was slightly over 11 ($M = 11.25$, $SD = 7.5$). While some were completing their master's work and using this course to meet their requirements, at the time of the survey all but one reported having earned at least one advanced degree. Even with this number of advanced degrees ($n = 15$), only two of the action researchers indicated that they had done formal research in the field as a function of their jobs or professional training. Eight others reported that they had engaged in simulated research experiences during their college course work (prior to the seminar), and six indicated that they had had no research experience.

Instrument

The survey (see Appendix A) was developed for this project and contained 18 5-point Likert scale items and 10 open-ended questions. The Likert-scale items were divided into two sections. The first section contained 10 items which prompted participants to compare their present attitudes toward research and research issues with those that they had prior to participating in the seminar. The second section contained 8 items which prompted respondents to reflect on their experiences and the skills they developed during their action research projects. Using Hoyt's Analysis of Variance Procedure, the survey was determined to be highly reliable ($R = .899$). Though not often used, Hoyt's Analysis of Variance "produces exactly the same results as K-R 20", which is desirable because the Kuder-Richardson formulas tend to yield a lower reliability coefficient than other methods, like Cronbach's alpha (Borg & Gall, 1989, p. 261).

The open-ended questions provided respondents with opportunities to construct responses that enabled them to provide examples of their experiences with and attitudes toward research based on their participation in the seminar. The survey also asked respondents to provide demographic data.

Data Analysis

This study employs qualitative analyses to explore the long-term effect on participants of an action research seminar one year after they completed their coursework. Specifically, the objectives were to investigate the ways in which:

1. teachers' participation affected their attitudes toward educational research;
2. teachers' participation affected their classroom practices; and
3. teachers integrated the new skills, especially the use of technology, that they had learned into their practice.

From the Likert-scale items, descriptive statistics were generated to determine respondents' general agreement or disagreement with particular survey items related to these objectives. Aggregate mean scores provided the data upon which general conclusions were drawn. In some cases, however, data were disaggregated to determine whether respondents' prior research experience or comfort with technology may have influenced their reactions. These are reported in frequency tables.

Responses to the open-ended questions were transcribed and analyzed; representative excerpts are provided to offer a richer view of the context from which participants were responding.

Results

Effects of Participation on Attitudes toward Research

As respondents reflected one year after their participation in the seminar, they reported overall more positive attitudes toward research after participating as compared to those they held prior to their participation (see Table 1). Mean scores for all respondents indicate that they agreed that they now felt more comfortable reading qualitative ($M = 4.31$, $SD = 0.87$) and quantitative ($M = 4.06$, $SD = 0.77$) research, as well as engaging in qualitative ($M = 4.13$, $SD = 0.62$) and quantitative ($M = 3.94$, $SD = 0.77$) research. The overall attitude toward research (see Item 5 in Table 1) as expressed by participants was positive ($M = 4.13$) but, somewhat surprisingly, also showed a larger amount of disagreement ($SD = 1.02$) than the attitudes expressed toward reading or engaging in both qualitative and quantitative research. Maybe most interesting was the common

belief ($M = 4.44$, $SD = 0.51$) that participants now held that they could engage in research within their classrooms that was as valuable as that which they read in educational journals. One individual summed up this feeling when she reported: "I have now experienced the value of organizing my concerns into a workable plan and measuring its effectiveness. So often I see, or sense, how effective a particular intervention is, but I haven't had the hard data to show others."

Table 1

Mean Scores of Attitudes Toward Research After Participating in Action Research Seminar for All Respondents

Items	M	SD
1. Greater comfort engaging in qualitative research	4.13	0.62
2. Greater comfort reading qualitative research	4.31	0.87
3. Greater comfort engaging in quantitative research	3.94	0.77
4. Greater comfort reading quantitative research	4.06	0.77
5. More positive attitude toward research	4.13	1.02
6. Able to do research on the job as valuable as that in journals	4.44	0.51

Note. $N = 16$. Scores for each statement ranged from 1 = Strong Disagreement to 5 = Strong Agreement.

Though it was not initially an objective of this study, the relatively larger deviation among respondents to the question regarding their attitudes (see Item 5 above) led the researchers to break down this item by respondents' prior research experience (see Table 2). This led to several discoveries. First, the two respondents who had already participated in field research either disagreed with or were neutral regarding the statement that they now possessed a more positive attitude. In an open-ended response, one of these individuals stated that "this was my third attempt at educational research. With that in mind, the answers to the survey questions have different meaning [for me] than for most participants and may not have the same value." Second, that those with no

experience showed the greatest diversity of opinion ($SD = 1.17$) even while reporting a generally positive attitude ($M = 4.17$) toward research. One of those respondents who disagreed with the statement captured some of her negative feelings when she stated that her attitude had not really changed but that "I still like designing [studies] and gathering data but I hate writing it up."

Table 2

Breakdown of Attitudes Toward Research by Research Experience

Group	N	M	SD
Field experience engaging in research	2	2.50	0.71
Simulated research in college course work	8	4.50	0.53
No previous research experience	6	4.17	1.17
Total	16	4.13	1.02

Note. Groups were categorized on the basis of self-report in terms of prior research experience. Scores for each statement ranged from 1 = Strong Disagreement to 5 = Strong Agreement.

Effects of Participation on Classroom Practices

Of those who responded to this question, 73% ($N = 11$) indicated that their participation had affected their job site performance in the year after their action research projects. Some of those uses were directly related to a specific project, but some appeared to be ancillary effects. One stated that "the intervention [that we devised] was used in our study, and I continue to use it in my classroom besides recommending it to others." Another stated that "I used the knowledge I gained to structure my reading program." Both of these teachers discovered benefits directly related to their own individual projects. Finally, one other teacher discovered in the process of her research that her students tended to "think of writing as the 'mechanics' -- physical [act of writing]. [This year] I've worked with my first grade class to stress the creativity, thought processes and procedures." By discovering in her project that she and her students were working from different definitions of writing, this first grade teacher was able to

stress other aspects of the writing process in explicit ways, presumably helping students to focus, at the appropriate times, on the psychomotor aspects of writing or the cognitive aspects.

Others, however, seemed to use the results of their research projects as springboards to effect other important issues or concerns. For instance, one second grade teacher's research sampled students at two elementary schools and focused on the perceptions of minority students by children in multicultural and non-multicultural settings. In the year since she completed this study she reported: "I committed myself to working on the district's Diversity Committee, as well as my building's Diversity Committee, to help implement changes I could that [I believed] were necessary [based on] my research findings." Another responded that her specific project had more of an indirect effect on her practices. She elaborated on this by adding "It has affected my work by causing me to gather and analyze data in a more controlled manner."

Of the four participants who responded that their project had not affected their classroom practices this year, the responses varied. One respondent simply said "no" without elaboration. One indicated that her training was in research and its application, implying that this is what she did on a regular basis. One other indicated that she had too many other responsibilities this year to revisit the research issues that she investigated but that she hoped to do so the next year. Finally, the last respondent indicated that she "enjoy[ed] reading research articles and determining to what degree . . . ideas and strategies [should] be implemented. My specific research has not influenced me to alter teaching techniques."

Effects of Participation on Integrating New Skills into Professional Practice

Since respondents received explicit instruction in research design and data collection, as well as the use of technological tools, there were a number of skills that respondents cited that they had integrated into practice. One of those skills was recognizing the limitations placed on research findings by virtue of the design of the study. One respondent summed this up well when she stated: "Recognizing the limitations of [my] study has helped me to realize that even with our best efforts, one

does not have crystal clear, right or wrong answers." In addition to the careful consideration of research on the basis of design, another respondent identified a change in her thought process as a result of her participation. She stated that "this past year I wrote a grant and included 3 evaluation measures. I now think 'How can we show the effectiveness [of what we are going to do]?"

Another focus of this particular objective was to explore teachers' perceptions of both their comfort level in accessing technological tools and their actual use of technology in improving their professional practices. After participating in the practicum, respondents voiced strong, positive perceptions ($M = 4.25$) about their comfort in using technology. In fact, 14 of the 16 participants either agreed or strongly agreed that they had an increased level of comfort using technology, which included the use of the Internet and statistical software packages, to improve their practices. Yet even with this large degree of comfort, respondents indicated noticeably less agreement ($M = 3.63$) and greater diversity of opinion ($SD = 1.50$) in their perceptions of their regular employment of technological tools for the purpose of improving their practices.

Table 3

Mean Scores of Perceptions Toward Technology Use in Improving Professional Practices for All Respondents

Items	M	SD
1. Comfort using technology in improving practice	4.25	1.06
2. Regularly employ technology in improving practice	3.63	1.50

Note. $N = 16$. Scores for each statement ranged from 1 = Strong Disagreement to 5 = Strong Agreement.

To explore this further, we broke down the responses to the item on participants' regular employment of technology by their comfort level (see Table 4). It was not surprising to find that the two individuals who were "very uncomfortable" with using technology or "neutral" on the issue did not see technology as being of much use in their

improving their own practices. What was surprising was the marked difference in the regular use of technology among those who perceive themselves as being "very comfortable" with technology ($M = 4.75$, $SD = 0.71$) and those who only see themselves as "comfortable" ($M = 2.83$, $SD = 1.17$).

Table 4

Breakdown of Regular Employment of Technology in Improving Practice by Comfort With Using Technology

Group	N	M	SD
Very comfortable with technology use	8	4.75	0.71
Comfortable with technology use	6	2.83	1.17
Neutral	1	2.00	
Uncomfortable with technology use	0		
Very uncomfortable with technology use	1	1.00	
Total	16	3.63	1.50

Note. Groups were categorized on the basis of self-report in terms of comfort using technology. Scores for each statement ranged from 1 = Strong Disagreement to 5 = Strong Agreement.

In open-ended responses, participants cited a number of technological resources that they used both for completing their projects and that they believed could help them improve their practices. Not surprisingly, the Internet, especially ERIC searches, were cited as helpful in accessing current literature useful for teacher-researchers. One stated that she and her partner used e-mail to contact other professionals. Others noted that they mainly used technology for word-processing. The use of technology was not limited to computers, though. Several respondents cited videotaping as being beneficial to their practices and one noted that she would "like to use more in my day-to-day work." Another teacher noted that he uses microcassette recorders with "all students so that every student [can give] oral samples of a foreign language simultaneously. In a limited

time frame (such as a class period), many more students were able to participate because of the use of recorders."

Discussion and Conclusions

One of the major objectives of the member institutions and individuals who planned and executed the action research seminar was to improve teachers' comfort with and ability to consume and create research that had personal value for them and their students. In part, there was an attempt to improve attitudes toward research by supporting teachers in their efforts to investigate their own job sites or classrooms. The intent was that this would compel them to investigate their own theories about teaching and learning, as well as some specific aspect of their practices. The results, as indicated in Table 1, suggest that, even a year later (after the euphoria that comes with the initial funding), these individuals perceive themselves as being capable of both consuming and creating research that is meaningful and valuable.

Certainly this view may reflect some naiveté on the parts of the respondents. The investigators noted that the highest mean score and smallest dispersion (see Item 6 in Table 1) were in response to the teacher-researchers perceiving themselves as able to do research at their job sites that is as valuable as those they read in professional journals. This seems a bit over-reaching in many ways, and published researchers may rightly assert that it is quite an arrogant claim. However, the respondents were not necessarily claiming to engage in and write up research findings that were polished enough to be published in those journals, merely that they could now do research that had as much "value" as those they have read. As consumers of research articles in professional journals, teachers read about classroom practices and theories of instruction that they often will adapt or modify to meet the needs of the students at their schools. The teacher-researchers in this study are now reporting that they are capable of investigating their own practices and their own students so that any changes that they make can be driven by the data that they are able to gather. If their perceptions are accurate, they are also more careful (and, hopefully, appropriately skeptical) of the claims that other researchers make in touting specific programs or theories.

Part of the reason for this more careful approach would appear to be related to the skills that participants gained as a result of their participation. These teacher-researchers are now more comfortable accessing information databases on the World Wide Web. This allows them to access multiple viewpoints on any specific topic. They are also more aware of the limitations of research designs, and this recognition surely makes teachers better researchers and better readers of others' research findings. Because they have experienced what it's like to be a researcher, they are clearly more aware and also appear to be more appreciative of the work that is done by educational researchers. Their own responses, as well as their research projects, demonstrated that they have heightened awareness of the need to gather data in systematic ways before drawing conclusions about the effectiveness of specific programs or methods. And, though the funding has dried up in the year since these teacher-researchers engaged in their projects, it is evident that this awareness has affected the ways in which these professionals talk about their classroom practices and the activities in which they engage to improve their own teaching and their students' learning.

In addition to the skills they have gained, they also appear to have developed attitudes that will enable them to apply theory to practice in ways that have value for them and their students. This was especially true for those teachers who had engaged in some simulated research in college courses. Having already been sensitized to principles and techniques of formal inquiry, they were overwhelmingly and consistently positive in their attitudes toward research after having done their own projects in the most meaningful contexts, their own classrooms and schools.

Lest we give the impression that simply having teachers participate in an action research seminar is a magic pill that can cure schools' ills, it should be noted that these are not your "average" teachers. For the most part, these are veterans of educational systems who are very motivated. Even with the support provided by district office personnel, various higher education faculty, and others, these people committed to a full year of seminars, in addition to the time required to review literature, gather and analyze data, and report on their findings. All of this while continuing to plan lessons, teach and

engage in the myriad other duties that all teachers perform as a function of their jobs. And while graduate credit may have been a motivator for one or two, most of the respondents already possessed a master's degree. In short, most of the participants were the teacher-leaders that schools and school districts already count upon to get the work done that needs to get done. Because they are leaders, however, it may be even more important for them to develop the skills necessary to research their own classrooms or schools. Having developed and applied these skills, then, they will be better able to mentor and support other teachers' efforts in investigating "problems" that reveal themselves in their own classrooms. By applying the techniques of systematic inquiry to practices with which they are already familiar or in which they are interested, these action researchers are poised to make even more significant contributions to their districts than they already do.

Educational Implications

A great deal of money is spent every year on the professional development of teachers, most all of it with the intention of empowering teachers to be better classroom professionals. We hope that these results encourage other districts and teachers to reconsider their own professional development efforts. One implication of the present study appears to be that certain individuals may benefit more than others in an action research seminar like the one described. Currently, many school districts take a one-size-fits-all approach to professional development. Many of these efforts are single-day or partial-day workshops and have little effect on the day-to-day practice of teachers. This particular Action Research Collaborative appears to have made a difference for teacher practice beyond the individuals' participation in the event/workshop/seminar itself, especially for those who already have been sensitized to general research methods and have done some simulated research. It also may encourage districts and higher education institutions to maintain collaboratives in order to provide teachers with the resources that they need to sustain research that is meaningful at the classroom level.

Unfortunately, many of the practices in which teachers engage currently are based on claims supported by anecdotal evidence or are the results of political agendas by

individuals or organizations. One need only watch TV or listen to radio to hear educators and others spout off the obvious benefits of their favored programs: Everyone will learn to read through intensive phonics instruction; Vouchers will make public education stronger because public schools will have to improve or close; and so on, ad nauseum. In discussing his concerns over making educational decisions based on the "obviousness" of a claim, Gage (1991) stated: "One noteworthy characteristic of [many] criticisms [of educational programs] is that they were what might be called nonempirical or, at least, not systematically and formally empirical" (p. 12). This lack of empiricism, he contended, often led people to accepting, as a truism, a principle which is not borne out by later empirical study.

Schools and the professionals working in them are under a great deal of pressure to change in systemic ways, but the process of change must be engaged in a thoughtful manner. More often than not, change is a difficult enough process for teachers to undergo, one that is made more difficult when teachers are caught in the crossfire of political agendas and lack the evidence that they need to do what is best for students. In attempting to make instruction both sensible and deliberate, action research can be used as a way for teachers to become aware of what their current practices are and on what research foundation those practices are built, if indeed they are built on any explicit foundation. Whether they consider particular practices effective or ineffective, by investigating the practice in a systematic way within their own classrooms, they can confirm or disconfirm their beliefs. In either case, teachers who are action researchers will have the tools and skills necessary to make informed decisions based on empirical and systematic inquiry, rather than on the "obviousness" of a claim.

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Appendix A

Action Research - One Year Later
Questionnaire

For each of the statements below, please circle the number which best indicates the degree to which you "agree" or "disagree" with the statement. Please use the following key:

5 = Strongly Agree 4 = Agree 3 = Neutral 2 = Disagree 1 = Strongly Disagree

Part I - All of the following items ask you to compare your attitude today with your attitude prior to engaging in the Action Research seminar.

Compared to before I participated in the Action Research Seminar:

- | | | | | | |
|---|---|---|---|---|---|
| 1. I now feel more comfortable when engaging in qualitative research activities, like case studies, in my own classroom/job site. | 5 | 4 | 3 | 2 | 1 |
| 2. I now feel more comfortable when reading qualitative research by other people. | 5 | 4 | 3 | 2 | 1 |
| 3. I now feel more comfortable when engaging in data gathering and statistical analysis employed in quantitative research. | 5 | 4 | 3 | 2 | 1 |
| 4. I now feel more comfortable when reading quantitative research by other people. | 5 | 4 | 3 | 2 | 1 |
| 5. I have a more positive attitude toward the topic of research. | 5 | 4 | 3 | 2 | 1 |
| 6. I feel more comfortable collaborating with others on research projects. | 5 | 4 | 3 | 2 | 1 |
| 7. I feel more comfortable sharing my findings with others. | 5 | 4 | 3 | 2 | 1 |
| 8. Data and test scores now have more meaning for me. | 5 | 4 | 3 | 2 | 1 |
| 9. I now understand why researchers employ the methods they do. | 5 | 4 | 3 | 2 | 1 |
| 10. I now feel that I can do research in my own classroom/job site which is as valuable as the research I read in professional journals | 5 | 4 | 3 | 2 | 1 |

Part II - All of the following items ask you to reflect on your experiences in the seminar and/or on the skills you developed.

- | | | | | | |
|--|---|---|---|---|---|
| 11. The doctoral students were helpful in their support of my research. | 5 | 4 | 3 | 2 | 1 |
| 12. The university personnel were helpful in their support of my research. | 5 | 4 | 3 | 2 | 1 |
| 13. The central office personnel, like the project directors and Jane Jasper, were helpful in their support of my research. | 5 | 4 | 3 | 2 | 1 |
| 14. I feel comfortable using technology, such as the Internet, to locate information which improves my instructional practices/job performance | 5 | 4 | 3 | 2 | 1 |
| 15. I regularly employ the Internet to locate information which improves my instructional practices/job performance. | 5 | 4 | 3 | 2 | 1 |
| 16. I see few ways in which research activities actually improve classroom initiatives. | 5 | 4 | 3 | 2 | 1 |

17. I would participate in a research project again. 5 4 3 2 1

18. The action research project was professionally valuable to me. 5 4 3 2 1

Prior to beginning the seminar, how would you have described your attitude toward educational research?

Has your participation in the Action Research seminar changed your attitude in any way? If so, how?

As you look back on your experience in the Action Research Seminar, has your participation affected your classroom work this year? Please provide examples.

In what ways were you supported in your efforts by

Higher education faculty?

District personnel?

Action research mentors from directory?

What effects (if any) did this support have for your project?

In what ways did you use technology to engage in your work? Was this beneficial? Explain

How did you use the results of your last year's research? Explain

Have you engaged in any additional research this year? If so, describe what you have done? If not, why not?